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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/553,597

Applicant(s)

TOURNIER ET AL.

Examiner

Katherine A. Bareford

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2009.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-13 and 15-22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. The amendment of March 16, 2009 has been received and entered. With the entry of the amendment, claim 14 is canceled, and claims 1-13 and 15-22 are pending for examination.

Claims

2. The Examiner notes that (1) in claim 3, lines 2-3, the features following “in preferably” do not further limit the claim; (2) in claim 4, lines 2-3, the features following “preferably” do not further limit the claim; (3) in claim 10, line 3, the features following “preferably” do not further limit the claim; (4) in claim 11, line 3, the features following “preferably” do not further limit the claim; (5) in claim 13, lines 2-3, the features following “and is preferably” do not further limit the claim; (6) in claim 18, lines 2-3, the features following “preferably” do not further limit the claim.

Claim Rejections - 35 USC § 102

3. The rejection of claims 19-21 under 35 U.S.C. 102(b) as being anticipated by Kunzli et al (US 5834066) is withdrawn due to applicant's amendments of March 16, 2009.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunzli et al (US 5834066) in view of Huhne (US 4835022).

Kunzli teaches a method for coating an object (substrate) to be coated with a meltable coating material. Column 7, lines 5-15. A flame is produced which has a maximum flame speed and a flame direction along a flame axis. Figure 1 (note nozzle bore 17 and axis 13), and column 2, lines 10-20 (the flame jet passes along the nozzle), column 3, lines 30-40 (flame jet speed of 1500-2000 m/s). The flame would be directed

towards the object to be coated. Figure 1 and column 7, lines 5-15 (as the material exits nozzle 6 onto the substrate). A quantity of meltable coating material is introduced into the flame. Column 3, lines 30-40, column 5, lines 30-40 (feeding through bores 14) and figure 1. The meltable coating material can be powder (which would have particles). Column 5, lines 45-50. The flame has a temperature which is sufficiently low that the particles of the powder are not completely evaporated during spraying, but is sufficiently high for the particles of the powder to be at least partially melted. Column 3, lines 30-40 (the melted material impacts the substrate, indicating not completely evaporated) The melted coating material is projected onto the object to be coated. Column 3, lines 30-40 and column 7, lines 5-15.

Claim 19: the device taught by Kunzli for the coating includes a burner connected to a source of combustible gas which produces a flame in a flame axis. Figures 1-2 and column 6, lines 5-30. Injector means are provided for introducing a meltable coating material into the flame. Column 5, lines 30-40 (radial bores 14), column 3, lines 30-40 and figures 1, 4. The injector means are suitable for introducing the meltable coating material into the flame in the form of a powder. Column 5, lines 45-50. If by the "means" applicant is invoking 35 USC 112, 6th paragraph, the Examiner notes that the injector means corresponds to the "injector" described by applicant in the specification (see page 4, last paragraph of the specification).

Claims 20-21: the injector means introduces a mixture of coating material /conveying gas (oxygen, for example) into the flame in an introduction direction.

Column 5, lines 30-40, 45-50 and 64-67. The introduction direction can be substantially radially relative to the flame axis. Figures 1, 4.

Kunzli teaches all the features required by the apparatus claims, except (1) the supply reservoir and the means for supplying the powder from the supply reservoir (claim 19) and (2) the mixing device to mix the powder and conveying gas (claim 22), as it is noted that the device merely has to be capable of providing the method of claim 1 (which it is as it provides the melting of coating material as claimed). As to the powder consisting of an alloy of zinc and aluminum and made of recycled material provided in the supply reservoir as claimed, this is not a required feature of the apparatus claims, as the powder is not part of the apparatus. All that is required is that the Kunzli device be capable of spraying this material. The Kunzli device is capable of spraying a powder of this alloy, as it is capable of spraying metals, ceramics and alloys such as MCrAlY's (see column 1, lines 45-55), and the use of recycled material would not affect the alloy make-up. As is noted in MPEP 2115, the material (zinc-aluminum) in the supply reservoir does not further limit the claim, "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." *In re Young*, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

However, Huhne teaches that when providing powder to a thermal spraying device it, it is well known to provide a mixer (see 52) where a conveying gas inlet (from line 30) connected to a conveying gas source (44) is provided and a powder inlet (from 50) is provided, and that the mixer (52) mixes the powder with a flow of conveying gas, and then the outlet (see line 26) for the mixture of coating material powder/conveying gas is connected to the injector (see 20) for powder to the spray gun. Figure 1 and column 4, line 50 through column 5, line 5. Huhne further indicates that a supply reservoir (powder container 50) is provided that supplies the powder through the line 26 to the injector. Figure 1 and column 4, line 50 through column 5, line 5.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kunzli to provided the claimed supply reservoir, mixer system and means to supply powder from the supply reservoir to the injector, as suggested by Huhne with an expectation of desirable spraying results, because Kunzli teaches thermal spraying with powder, with Kunzli teaching to use a conveying gas/powder mixture from the injector, and Huhne teaches a conventional system for thermal spray guns that provides the conveying gas/powder mixture from a powder supply reservoir to an injector. If by the "means" for supplying the powder applicant is invoking 35 USC 112, 6th paragraph, the Examiner notes that the supply means of Huhne corresponds to the supply means described by applicant in the specification (see page 4, last paragraph of the specification).

7. Claims 1, 2, 5, 6, 10-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunzli et al (US 5834066) in view of Payne et al (US 6503575), Japan 05-339696 (hereinafter '696) and EITHER Popoola et al (US 6017591) OR Donelon (US 2004/0047992).

Kunzli teaches a method for coating an object (substrate) to be coated with a meltable coating material. Column 7, lines 5-15. A flame is produced which has a maximum flame speed and a flame direction along a flame axis. Figure 1 (note nozzle bore 17 and axis 13), and column 2, lines 10-20 (the flame jet passes along the nozzle), column 3, lines 30-40 (flame jet speed of 1500-2000 m/s). The flame would be directed towards the object to be coated. Figure 1 and column 7, lines 5-15 (as the material exits nozzle 6 onto the substrate). A quantity of meltable coating material is introduced into the flame. Column 3, lines 30-40, column 5, lines 30-40 (feeding through bores 14) and figure 1. The meltable coating material can be powder (which would have particles). Column 5, lines 45-50. The flame has a temperature which is sufficiently low that the particles of the powder are not completely evaporated during spraying, but is sufficiently high for the particles of the powder to be at least partially melted. Column 3, lines 30-40 (the melted material impacts the substrate, indicating not completely evaporated) The melted coating material is projected onto the object to be coated. Column 3, lines 30-40 and column 7, lines 5-15.

Claim 2: the material can be powder. Column 5, lines 45-50.

Claim 5: the material is introduced into the flame in at least one introduction direction that can have a radial component relative to the flame axis. Figures 1 and 4 and column 5, lines 30-40 (radial bores 14).

Claim 6: the introduction direction is substantially radially relative to the flame axis. Figures 1 and 4 and column 5, lines 30-40 (radial bores 14).

Claim 13: the maximum flame speed can be 2000 m/s. Column 7, lines 10-15.

Kunzli teaches all the features of these claims except that (1) the flame speed and distance from the object to be coated are selected to provide that the meltable coating material is at least partially molten at the time of impact (claim 1), (2) the specific spraying material used (claims 1, 10-12), and (3) the use of waste powder and its origin (claims 1, 15).

However, Payne teaches processes for thermal spraying include high velocity oxy-fuel deposition, flame spray, plasma spray, etc. Column 1, lines 15-30. In the high velocity oxy-fuel, for example, powdered coating material is injected into the nozzle and heated to near or above its melting point, with the temperature and velocity of the gas stream being adjustable. Column 2, lines 25-40. The molten particles impinge on the surface to be coated. Column 2, lines 25-40. In the flame spray process, powder, for example, is injected into the flame where it is melted and accelerated. Column 2, lines 55-65. The maximum gas temperature is controllable. Column 2, lines 55-65. The molten particles are projected against the surface to be coated, forming adherent splats. Column 2, lines 55-65. Payne teaches that in thermal spray processes, variations in gas

stream velocity from the thermal spray device can result in variations in particle velocities and hence dwell time of the particle in flight, which affects the time the particles can be heated and accelerated, and hence the maximum temperature and velocity of the particles. Column 6, line 50 through column 7, line 5. Dwell time is also affected by the distance the particle travels between the torch or gun and the surface to be coated. Column 7, lines 1-5.

Furthermore, '696 teaches that a known thermal spray coating material to be applied is a Al-Zn coating with 5 to 55% Al. The material can be applied by known thermal spraying, such arc spray or plasma spray, for example. Paragraph [0005]. The material can be in powder (granular) or wire form. Paragraph [0005]. The material can consist of Zn and Al and can be 16% Al, for example. Paragraph [0007] and Table 2.

Popoola teaches spray coating by various processes that project particles. Column 3, lines 55-60 and column 4, lines 50-55. Popoola teaches that it is desirable to recover and recycle waste particles formed during application. Column 5, lines 15-20.

Donelon teaches that thermal spray coating, such as by plasma spray or flame spray. Paragraphs [0001], [0002]. Donelon teaches thermal spray coating with a masking process (paragraph [0018]) and that it is well known to recycle overspray from the process for reuse (paragraphs [0025], [0030], [0031]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kunzli to optimize both the precise maximum flame speed and distance between the object to be coated and the flame as suggested by Payne

in order to provide a desirable spraying condition for the specific material to be sprayed, because Kunzli teaches a thermal spraying process for flame spraying a molten material and Payne teaches that when thermal spraying, it is well known that variations in gas stream velocity (which would correspond to the flame speed) and distance that the particles travel are result effective variables that affect the dwell time and thus the resulting coating, and one of ordinary skill in the art would optimize known result effective variables, as "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Furthermore, these conditions would be selected to also provide that the material is at least partially molten at the time of impact, as Kunzli teaches spraying a melted material and Payne also teaches that in such flame spraying process, the molten particles impinge on the substrate, indicating desirably molten at time of impact.

It would further have been obvious to modify Kunzli in view of Payne to use a Zn-Al alloy with 5-55%, including 16% Al, for example, as the coating material as suggested by '696 with an expectation of desirable spraying results, because Kunzli in view of Payne teach thermal spraying with powder, that can be metal (see Kunzli, column 1, lines 40-55, Payne, column 1, lines 20-25), and '696 teaches conventional material applied by a flame spraying process. This material would provided the claimed melting point of claim 10, and the consisting of residual of claim 12, and one of ordinary skill in the art would understand the 5-55% Al to be referring to wt% Al in an

Al-Zn alloy, as the Examiner takes Official Notice that Al-Zn is the conventional format for describing such alloys and the amount of each is conventionally in weight % (and as well one would perform optimization from the ranges given). As to the precise amount of Al and Zn used, In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

It would further have been obvious to modify Kunzli in view of Payne and '696 to recover and recycle waste products formed during a projection application as powders for the present spraying, as suggested by EITHER Popoola OR Donelon with an expectation of desirable spraying results, because Kunzli in view of Payne and '696 teach thermal spraying with powder, with '696 noting that thermal spraying includes arc spraying with wire, and (A) Popoola teaches that it is desirable to recover and recycle waste particles formed during projection application, and particles are what the Kunzli in view of Payne and '696 uses to apply the coating OR (B) Donelon also provide that is well known to recycle overspray powder from a thermal spraying process for reuse, and particles are what Kunzli in view of Payne and '696 uses to apply the coating. Both of these references provide the suggestion to recycle excess material from a projection process, which is what is described by Kunzli in view of Payne and '696, and to reuse in another projection process would be clearly suggested since powders are what is desired to be projected, and as to claim 15, '696 even notes the conventional thermal spraying using wire by arc spraying, indicating that the projection overspray

would also be formed by this method as well (note that Donelon describes overspray powders by “thermal spraying” as well).

8. Claims 3-4 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunzli in view of Payne, ‘696 and EITHER Popoola OR Donelon as applied to claims 1, 2, 5, 6, 10-13 and 15 above, and further in view of Pettit, Jr et al (US 4696855).

Kunzli in view of Payne, ‘696 and EITHER Popoola OR Donelon teach all the features of these claims except (1) the particle size (claims 3, 4), and (2) the introduction direction relative to the longitudinal axis of the object to be coated (claims 7-9).

However, Pettit teaches that when thermal spraying (Pettit exemplifies plasma spraying, but is not limited to plasma spraying), it is well known to provide a substrate with a relative longitudinal direction relative to the spray gun (as shown in figure 1, in this case the longest length axis is in the up and down direction). Figure 1 and column 1, lines 55-65 and column 3, lines 1-10. Pettit further shows that radial injectors that inject particles into the spray stream can extend in parallel with the up and down longitudinal axis so that the introduction direction of the particles in parallel to the longitudinal axis. Figure 1 (see lines 32 and ports 22) and column 3, lines 15-50. At least two introduction directions can be provided. Figure 1 and column 3, lines 25-35 (the different lines 32 and ports 22, for example). These introduction directions can also extend symmetrically at one side and the other of a plane which comprises the flame axis. Figure 1 (see lines 32 and ports 22). The direction also extends perpendicularly to

the longitudinal axis of the object to be coated (the opening bend of line 32 where the figure says "To Powder Feeder" before it becomes parallel to the object's longitudinal axis). Figure 1. Pettit also teaches that known particle sizes to use in thermal spraying can conventionally be 50-90 microns in size, for example. Column 6, lines 8-11.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon to use particle sizes in the range of 50-90 microns, for example, as suggested by Pettit with an expectation of desirable spraying results, because Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon teach thermal spraying with powder, and Pettit teaches conventional particle sizes for thermal spraying. It would further have been obvious to modify Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon to provide the introduction direction relative to the longitudinal axis of the object to be coated as suggested by Pettit with an expectation of desirable spray results, because Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon provide thermal spraying onto an object with multiple introduction ports in that are radial to the flame axis and Pettit teaches that when thermal spraying it is conventional to coat an object with a longitudinal axis and to provide multiple radial ports in a position to introduce powders in a positioning as claimed.

9. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon as applied to claims 1, 2, 5, 6, 10-13 and 15 above, and further in view of Powers et al (US 4011073).

Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon teach all the features of these claims except (1) sieving the unprocessed waste powder (claim 16), and (2) drying/deoxidizing powders (claim 17).

However, Powers teaches making flame spray powders. Column 1, lines 5-10. When recycling powders as part of this flame spray powder making process, Powers teaches screening (sieving) the particles when making the powder to remove outsize agglomerates and then retreating and rescreening the outsize agglomerates to recycle. Column 2, lines 25-30 and 60-68. Furthermore, Powers provides spray drying the powders as part of the powder making process. Column 1, lines 60-65 and column 2, lines 20-25.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon to screen and dry the recycled waste powder, as suggested by Powers with an expectation of forming desirable powders for flame spraying, because Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon teach thermal spraying with powder and the suggestion to recycle powder, and Powers teaches to form desirable powders ready for flame spraying by a process that includes screening and drying the component materials and powders to form an acceptable powder for flame spraying.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon as applied to claims 1, 2, 5, 6, 10-13 and 15 above, and further in view of Heitz (US 5445514).

Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon teach all the features of this claim except the maximum temperature of the flame.

However, Heitz teaches that when flame spraying with a high velocity process, it is well known for the flame temperature to be 5000 degrees F (2760 degrees C). Column 8, lines 15-20.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon to use a flame temperature in the range of 2760 degrees C, for example, as suggested by Heitz with an expectation of desirable spraying results, because Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon teach high velocity thermal spraying with powder, and Heitz teaches a conventional flame temperature for such a process, and since only one temperature is taught, it would be inclusive of the maximum flame temperature of the process.

Response to Arguments

11. Applicant's arguments filed March 16, 2009 have been fully considered but they are not persuasive.

(A) Applicant argues as to the rejection of the method claims 1, 2, 5, 6, 10-13 and 15 using Kunzli in view of Payne, '696 and EITHER Popoola OR Donelon (and the further dependent claims as to the method), that as of the effective date of the present application, one of ordinary skill in the art would have been convinced that recycling was impossible in the particular case where spray coating was with zinc-aluminum powder because of the substantial oxidation problems with this particular type of powder. Applicant cites the Declaration by the inventors of March 17, 2009 as to this issue, where applicants surprisingly found that zinc-aluminum particles can be reused in flame spraying application by simply introducing them at the right portion of the flame. The Examiner has reviewed these arguments and the declaration, however, the rejection is maintained. In the declaration, opinion evidence is provided only. In the declaration, applicants indicate that they provided countless experiments in thermal spraying to use recycled ZnAl waste powder, eventually turning to HVOF spraying where they discovered that the particulates can be reused (even though an oxide layer formed thereon) in flame spray application simply by introducing them into the right portion of the flame; applicants further indicate that the device of Kunzli (apparently meaning the one cited by the Examiner, but not explicitly defining it) cannot be used with ZnAl particles because the bores end in a zone of the flame that has a temperature too high, and the particles melt inside the bores and clog the bores. As discussed in MPEP 716.01 (c)(III), "In assessing the probative value of an expert opinion, the examiner must consider the nature of the matter sought to be established, the strength

of any opposing evidence, the interest of the expert in the outcome of the case, and the presence or absence of factual support for the expert's opinion. *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986).” Furthermore, as discussed in MPEP 716.02(d), “Whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the “objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support.” In other words, the showing of unexpected results must be reviewed to see if the results occur over the entire claimed range. In *re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980).” Here, the nature of the matter sought to be established is the unexpected results from reusing Zn-Al, the experts have an interest in the outcome of the case as inventors, and there is no factual support for the expert's opinion. Opposing evidence includes that the conditions under which the declaration cites reusing Zn-Al are not commensurate in scope with what is claimed. For example, (a) the declaration indicates putting the particles in the right portion of the flame (which is not defined, but apparently a special part), while claim 1 simply has introducing the particles into the flame with no limit on where; and (b) the description of reusing the particles appears to be based on simply reusing the particles untouched, which is not required by present claim 1 for example. In claim 1, the particles can be processed before being reused as worded. Opposing evidence as to the reuse of Zn-Al for the scope of the claims as worded, includes Leonard (US 4075008), for example, which teaches that it is well

known to recover (recycle) zinc from waste products, including from dust (particles) and materials with zinc oxide, by melting the products to recover the zinc for reuse (column 1, lines 10-40). Claim 1 does not prevent recycling and reuse of the waste product zinc by this fashion, if the zinc is reused to form the Zn-Al alloy used for spraying. Opposing evidence as to the declaration's statement as to Kunzli melting the Zn-Al alloy in the bores includes that one would expect the cited Kunzli et al (US 5834066) to actually be able to inject metal alloy particles as described and be working (that is, operable, note MPEP 2121); and that the declaration does not explicitly identify the Kunzli being discussed as the same Kunzli used by the Examiner. Furthermore, Kunzli indicates that various amounts of fuel and hydrogen/oxygen can be provided and varying pressures and rates can be used to produce a flame jet with various amounts of entry and that varying control of the flame energy can be provided with cooling of the combustion chamber and nozzle (column 6, line 50 through column 7, line 35). All of this indicates clearly that varying temperatures/energy of the flame can be provided from the combustion chamber indicating that the flame temperature can be controlled so that the desired feeding of the metallic particles can be provided so that the spray system operates as desired. As a result of reviewing all the provided evidence, it is the Examiner's position that the weight of the opposing evidence overcomes the other considerations and the rejection is maintained.

(B) As to the apparatus claims 19-22 (now rejected by Kunzli in view of Huhne due to applicant's amendments), applicant makes the same arguments as with regard

for claim 1 above, and further argues that the zinc-aluminum waste product powder is an integral part of the claimed device and is not a structural limitation of claim 19. The Examiner has reviewed these arguments, however, the rejection is maintained. As to the same arguments with regard to claim 1, the Examiner maintains her position that these arguments do not overcome the rejection for the same reasons as discussed with regard to claim 1 in section (A) above. Furthermore, as to the argument that the zinc-aluminum waste product powder is an integral part of the claimed device, the Examiner disagrees. As is noted in MPEP 2115, the material (zinc-aluminum) in the supply reservoir does not further limit the claim, "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In re Young, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)). The zinc-aluminum is simply a content of the apparatus during intended operation and is not part of the apparatus itself. Therefore, the scope of claim 19 is much broader than an apparatus limited to working on reused zinc-aluminum powder, and the arguments and declaration as to the unexpected reuse of zinc-aluminum are not commensurate in scope with what is claimed.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Katherine A. Bareford/
Primary Examiner, Art Unit 1792